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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

MARCH 28, 1957

NOTICE TO RECIPIENTS

1. ATTACHED HERETO IS THE FINAL ELINT REPORT OF MISSION A-2024 FLOWN ON 10 JULY, 1956.
2. THE INCLOSED REPORT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAW, TITLE 18, U. S. C., SECTIONS 793 AND 794. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW.
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ANDREW E. MCDAVID
COLONEL, USAF
COMMANDER

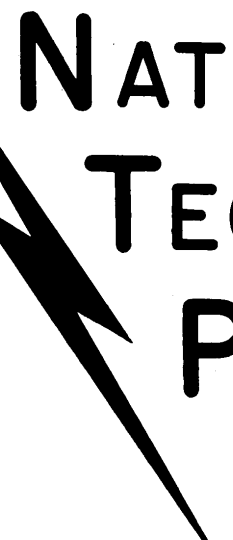
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1. NTPC CHESS REPORT #4
(FINAL ELINT REPORT-
MISSION A-2024)

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NATIONAL TECHNICAL PROCESSING CENTER

CHESS REPORT NO. 4

FINAL ELINT REPORT

MISSION A-2024



AIR FORCE
ARMY
NAVY
CIA

COPY NO. 3

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TOP SECRET CHESS**FINAL ELINT REPORT OF MISSION A-2024**

MISSION A-2024 WAS FLOWN ON 10 JULY, 1956 AND COVERED AREAS IN EAST GERMANY, POLAND, AND SOUTH-WEST USSR AS FAR AS THE KERCH PENINSULA ON THE INBOUND LEG, AND SOUTH-WEST USSR, RUMANIA, HUNGARY, CZECHOSLOVAKIA, AND EAST GERMANY ON THE RETURN LEG. TOTAL ELAPSED TIME OF THE ENTIRE FLIGHT WAS EIGHT HOURS AND THIRTY-FIVE MINUTES. ELINT SIGNALS WERE ANALYZED FOR THIS REPORT FROM THE TIME THE AIRCRAFT ENTERED EAST GERMANY AT 0434Z UNTIL ITS RETURN INTO WEST GERMANY AT 1055Z, A PERIOD OF SIX HOURS AND TWENTY-ONE MINUTES.

ELINT EQUIPMENT FUNCTIONED NORMALLY THROUGHOUT THE FLIGHT. FIXED S-BAND ANTENNAS WERE INSTALLED ON BOTH SIDES OF THE AIRCRAFT AND HAD GOOD SENSITIVITY. THE DIPOLES WERE ROTATED 45° COUNTER-CLOCKWISE, AS SPECIFIED. THE RECORDER WAS TURNED ON AT TAKE-OFF AND REMAINED ON UNTIL LANDING. TAPE SPEED OF THE AIRBORNE RECORDER AVERAGED ABOUT TWO PERCENT SLOW, BUT THIS FACT WAS CONSIDERED IN THE ANALYSIS OF THE ELINT INFORMATION.

THE SIGNAL-BY-SIGNAL ELINT ANALYSIS OF THIS MISSION IS INCLOSED IN THIS REPORT. THIS ANALYSIS COVERS ALL ELECTROMAGNETIC RADIATIONS INTERCEPTED OVER DENIED TERRITORY, SHOWING THE RELATIVE AMPLITUDE OF EACH SIGNAL AS A FUNCTION OF ZEBRA TIME. THE TRACK OVERLAYS TO BE USED WITH THE WORLD AERONAUTICAL CHART SERIES (SCALE 1:1,000,000) HAVE BEEN PREVIOUSLY DISTRIBUTED AND ARE TO BE USED WITH THE ELINT SIGNAL ANALYSIS DATA TO DETERMINE THE GEOGRAPHIC LOCATIONS OF THE EMITTERS OF THE VARIOUS INTERCEPTED ELINT SIGNALS. TO ASSIST IN THE ESTABLISHMENT OF THESE LOCATIONS, TIME CORRELATION CHARTS HAVE ALSO BEEN INCLUDED IN THIS REPORT.

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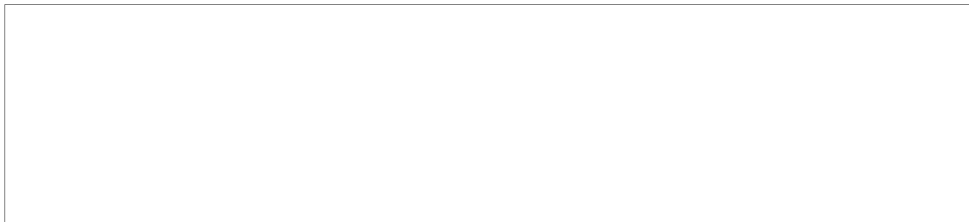
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TO DETERMINE THE LOCATION OF RADARS WITH KNOWN OR ESTIMATED TRANSMITTING POWER, RANGE OF INITIAL INTERCEPT CAN BE COMPUTED FOR A GIVEN AIRCRAFT ALTITUDE. THESE ALTITUDES ARE INDICATED ON THE TRACK OVERLAYS FOR EACH CHECK-POINT, ALONG WITH THE LATITUDE, LONGITUDE, AND TIME PERTINENT TO EACH CHECK-POINT. RANGE ARCS EQUAL TO THE COMPUTED RANGE VALUES CAN BE DRAWN FROM THE POINT OF INITIAL INTERCEPT AND THE POINT OF LAST CONTACT, AND THE INTERSECTION OF THESE TWO ARCS, ALONG WITH A PERPENDICULAR DRAWN FROM THE FLIGHT PATH AT THE POINT OF MAXIMUM SIGNAL STRENGTH, WILL GIVE A FAIRLY ACCURATE FIX. THIS IS, OF COURSE, ASSUMING THAT THE AIRCRAFT IS ON A STRAIGHT COURSE. IN THE CASE OF V-BEAM RADARS SUCH AS THE TOKEN, RANGE TO THE EMITTER CAN BE CALCULATED IN AN ENTIRELY DIFFERENT WAY, WHEN THE TIME DIFFERENCE BETWEEN INTERCEPTS OF THE VERTICAL AND SLANT BEAMS IS KNOWN, TOGETHER WITH THE ALTITUDE OF THE AIRCRAFT AND THE FIXED SEPARATION OF THE VERTICAL AND SLANT BEAMS (10°). THIS BEAM SEPARATION (B.S.) IS LISTED IN THE ELINT SIGNAL ANALYSIS FOR EACH V-BEAM RADAR.

A TOTAL OF 304 DIFFERENT SIGNALS WERE INTERCEPTED WHILE THE AIRCRAFT WAS OVER DENIED TERRITORY. 158 OF THESE WERE INTERCEPTED ON CHANNEL 2 ON THE LEFT SIDE OF THE AIRCRAFT, AND THE REMAINING 146 WERE INTERCEPTED ON CHANNEL 3 ON THE RIGHT SIDE. A DISCUSSION OF THE INTERCEPTED SIGNALS BY TYPE FOLLOWS:



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TIME CORRELATION CHART

	CAMERA DESIGNATOR	CHECK POINT	COORDINATES	OF CHECK POINT	TIME OF ARRIVAL AT CHECK POINT	ASSIGNED EXPOSURE NO.	(LOCAL TIME - 2 TIME PLUS ONE HOUR) RECORDED EXPOSURE TIME IN LOCAL TIME	DIFFERENCE IN TIME	FOR MISSION A-2024 REMARKS
1	A	5032N - 0930E	0431Z						
6						NC			CAMERA OFF
7						NC			CAMERA OFF
8						NC			CAMERA OFF
1	B	5122N - 1121E	0448Z						
6						NC			CAMERA OFF
7						NC			CAMERA OFF
8						NC			CAMERA OFF
1	C	5144N - 1425E	0516Z						
6						0617:14	1:01-14		LEVEL FLIGHT OVER
7						0618:48	1:02-48		COTTBUS
8						0618:32	1:02-52		
1	D	5111N - 1608E	0526Z						
6						0629:56	1:03-56		
7						0630:32	1:04:32		
8						0630:33	1:04:33		LEVEL FLIGHT OVER LIEGNITZ
1	E	5052N - 1905E	0546Z						
6						0645:45	59:45		TURNING OVER CZESTOCHOWA
7						0646:24	1:00:24		
8						0646:22	1:00:22		
1	F	5004N - 2157E	0603Z						
6						0703:22	1:00:22		

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TIME CORRELATION CHART

	CAMERA DESIGNATOR	CHECK POINT	COORDINATES OF CHECK POINT	TIME OF ARRIVAL AT CHECK POINT	ASSIGNED EXPOSURE NO.	(LOCAL TIME + 2 TIME PLUS ONE HOUR) RECORDED EXPOSURE TIME IN LOCAL TIME	DIFFERENCE IN TIME	FOR MISSION A-2024 REMARKS
7						0705:04	1:02:04	LEVEL FLIGHT OVER RZESZOW
8						0705:55	1:02:55	
1	G	4914N - 2350E	0615Z					
6						0716:38	1:01:38	
7						0717:21	1:02:21	
8						0717:10	1:02:10	LEVEL FLIGHT A FEW MILES BEYOND STRY
1	H	4813N-2600E	0630Z					
6						0731:25	1:01:25	
7						0732:22	1:02:22	LEVEL FLIGHT JUST BEYOND CHERNOVITSKY
8						0732:55	1:02:55	
1	I	4700N - 2750E	0646Z					
6						0746:44	1:00:44	
7						0747:32	1:01:32	TURNING BETWEEN IASI AND RUSI
8						0747:13	1:01:13	
1	J	4648N - 3640E	0657Z					
6								POSITION PROBABLY LOGGED INCORRECTLY.
7								
8								
1	K	4634N - 3250E	0717Z					
5						0818:22	1:01:22	
7						0819:16	1:02:16	TURNING AND ONE HALF WAY
8						0818:47	1:01:47	BETWEEN KHERSON & BEL <i>SH</i>

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TIME CORRELATION CHART

	CAMERA DESIGNATOR	CHECK POINT	COORDINATES OF CHECK POINT	TIME OF ARRIVAL AT CHECK POINT	ASSIGNED EXPOSURE NO.	(LOCAL TIME + 2 TIME PLUS ONE HOUR) RECORDED EXPOSURE TIME IN LOCAL TIME	DIFFERENCE IN TIME	FOR MISSION A-2024 REMARKS
1	L	4540N - 3427E	0730Z					
6						0830:52	1:00:52	
7						0832:48	1:02:48	LEVEL FLIGHT JUST
8						0831:16	1:01:16	BEYOND DZHANKOY
1	M	4512N - 3542E	0737Z					
6						0841:04	1:04:04	
7						0841:02	1:05:02	LEVEL FLIGHT OVER
8						0841:27	1:04:27	SM. TOWN OF KENEGEZ
1	N	4523N - 3640E	0745E					
6						0846:25	1:01:25	TURNING JUST BEYOND KERCH
7						0847:24	1:02:24	
8						0847:47	1:02:47	
1	O	4450N - 3450E	0800Z					CANNOT CHECK POSITION
6								COMPLETE OVERCAST
7								
8								
1	P	4434N - 3415E	0804Z					
6						0906:03	1:02:03	JUST OUTSIDE OF YALTA
7						0907:05	1:03:05	HEAVY CLOUDS & OVERCAST
8						0907:21	1:03:21	
1	Q	4430N - 3330E	0810Z					
6						0910:08	1:00:09	

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TIME CORRELATION CHART

	CAMERA DESIGNATOR	CHECK POINT	COORDINATES	OF CHECK POINT	TIME OF ARRIVAL AT CHECK POINT	ASSIGNED EXPOSURE NO.	LOCAL TIME = Z TIME PLUS ONE HOUR RECORDED EXPOSURE TIME IN LOCAL TIME	DIFFERENCE IN TIME	FOR MISSION A-2024 REMARKS
7							0911:09	1:01:09	TURNING OVER SEVASTOPOL
8							0910:24	1:00:24	
1	R	4507N - 3400E		0818Z					
6							0919:46	1:01:46	HEAVY CLOUDS & OVERCAST
7							0920:50	1:02:50	TURNING OVER SARABUZ
8							0920:01	1:02:01	AIRFIELD (?)
1	S	4528N - 3238E		0827Z					
6							0929:12	1:02:12	JUST BEGINNING TO TURN
7							0930:17	1:03:17	OVER KIPOHAK
8							0930:25	1:03:25	
1	T	4630N - 3040E		0844Z					
6							0943:42	59:42	TURNING OVER UDESSA
7							0945:50	1:01:50	
8							0944:52	1:00:52	
1	U	4550N - 2910E		0854Z					
6							0955:54	1:01:54	LEVEL FLIGHT OVER
7							0956:03	1:02:03	GLAVANY
8							0955:15	1:01:15	
1	CC	4820N - 2110E		0944Z					
6							1045:07	1:01:07	LEVEL FLIGHT JUST BEFORE
7							1046:26	1:02:26	MISKOLC
8							1045:49	1:01:49	

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	CAMERA DESIGNATOR	CHECK POINT	COORDINATES OF CHECK POINT	TIME OF ARRIVAL AT CHECK POINT	ASSIGNED EXPOSURE NO.	(LOCAL TIME - Z TIME PLUS ONE HOUR) RECORDED EXPOSURE TIME IN LOCAL TIME	DIFFERENCE IN TIME	FOR MISSION A-2024 REMARKS
1	DD	4836N - 1907E	0956Z					
6						1057:40	1:01:40	LEVEL FLIGHT OVER
7						1059:02	1:03:02	SMALL TOWN OF NEMCE
8						1057:13	1:01:13	
1	EE	4909N - 1634E	1014Z					
6						1115:32	1:01:32	TURNING OVER BRNO
7						1116:58	1:02:58	
8						1115:45	1:01:45	
1	FF	5002N - 1423E	1030Z					
6						1129:49	59:49	LEVEL FLIGHT OVER
7						1131:19	1:01:19	PRAGUE
8						1128:47	58:47	
1	GG	5100N - 1217E	1044Z					
6						1144:07	1:00:07	BEGINNING TO TURN
7						1145:38	1:01:38	POSITION $\frac{1}{2}$ WAY BETWEEN
8						1142:51	58:51	ZEITZ & ALTENBURG
1	HH	5024N - 1022E	1055Z					
6								CAMERA OFF
7								
8								

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